

## **DETAILED ACTION**

### ***Amendment***

1. Acknowledgement is made of Amendment filed 05-08-08.

Claims 1-5 are amended.

Claims 7-16 are added.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Amended Claim 4 recites the limitation "the base member" in lines 9 and 10.

There is insufficient antecedent basis for this limitation in the claim.

4. Amended Claim 5 recites the limitation "the base member" in lines 10 and 11.

There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3 and 6-12 are rejected under 35 U.S.C.103(a) as being unpatentable over Ishida et al. (US6365438) in view of Iketani et al. (US20020004250)

**Re claim 1**, Ishida et al. show and disclose

An electronic circuit board intermediate member comprising:

a carrier tape (tape 8, fig. 1C) being formed as an exfoliate layer (exfoliated adhesive tape [col. 8, line 19]),

a plurality of interposer boards (10, fig. 1C) being cut out from an interposer board tape (package body 100a is diced into circuit substrates 1 as shown in FIG. 1C and 1C' [col. 10, line 7]);

the interposer boards being disposed on the carrier tape at every predetermined interval (fig. 1C), each interposer board having a base member (7, fig. 1C) mounting an IC chip (6, fig. 1C), extended electrodes (9, fig. 1C) being formed on the base member to be arranged between the carrier tape and the base member, the carrier tape being arranged only on a side (bottom) of the extended electrode, opposite the base member, each extended electrode being connected to a corresponding electrode of the IC chip (6, fig. 1C), and an adhesive layer (adhesive layer of tape 8) being formed to cover the extended electrode.

Ishida et al. does not disclose

the interposer boards being good interposer boards and selected from an interposer board tape;

Iketani et al. teaches a device wherein

the interposer boards being good interposer boards and selected from an interposer board tape; (the individual semiconductor devices are measured to determine their qualities [0055])

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to measure the individual semiconductor devices of Ishida et al. as taught by Iketani et al., in order to improve the qualities of products.

**Re claim 2,** Ishida et al. show and disclose

A manufacturing method for manufacturing an electronic circuit board intermediate member comprising:

applying adhesive (adhesive tape 8, fig. 1C) on extended electrodes (9, fig. 1C) of an interposer board tape (fig. 1C), the interposer board tape being obtained by forming the extended electrodes on a base member (7, fig 1C), a plurality of IC chips (6, fig. 1C) being mounted on the base member, and each of the extended electrodes being connected to corresponding electrode of each of the IC chips (fig. 1C);

obtaining individual interposer boards by cutting the interposer board tape (package body 100a is diced into circuit substrates 1 as shown in FIG. 1C and 1C' [col. 10, line 7]),

disposing only the interposer boards on a carrier tape (tape 8, fig. 1C) at every predetermined interval (fig. 1C), the carrier tape being obtained by forming an exfoliate layer on a base tape (exfoliated adhesive tape [col. 8, line 19]) such that the extended electrode are arranged between the carrier tape and the base member, the carrier tape being arranged only on a side (bottom) of the extended electrode, opposite the base member,

Ishida et al. does not disclose

selecting only good interposer boards;

Iketani et al. teaches a device wherein

selecting only good interposer boards (the individual semiconductor devices are measured to determine their qualities [0055]);

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to measure the individual semiconductor devices of Ishida et al. as taught by Iketani et al., in order to improve the qualities of products.

**Re claim 3,** Ishida et al. show and disclose

A manufacturing apparatus for manufacturing an electronic circuit board intermediate member comprising:

first means for applying adhesive (adhesive tape 8, fig. 1C) on extended electrodes (9, fig. 1C) of an interposer board tape (fig. 1C), the interposer board tape being obtained by forming the extended electrodes on a base member (7, fig 1C), a plurality of IC chips (6, fig. 1C) being mounted on the base member, and each of the extended electrodes being connected to corresponding electrode of each of the IC chips (6, fig. 1C);

second means for obtaining individual interposer boards by cutting the interposer board tape (In the cutting step, package body 100a is diced into circuit substrates 1 as shown in FIG. 1C and 1C' [col. 10, line 7]);

fourth means for disposing only the interposer boards on a carrier tape (adhesive tape 8, fig. 1C) at every predetermined interval (fig. 1C), the carrier tape being obtained by forming an exfoliate layer on one face of a base tape (exfoliated adhesive tape [col. 8, line 19]), such that the extended electrode are arranged between the carrier tape and

Art Unit: 2859

the base member, the carrier tape being arranged only on a side (bottom) of the extended electrode, opposite the base member,

Ishida et al. does not disclose

third means for selecting only good interposer boards;

Iketani et al. teaches a device wherein

means for selecting only good interposer boards (the individual semiconductor devices are measured to determine their qualities [0055]);

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to measure the individual semiconductor devices of Ishida et al. as taught by Iketani et al., in order to improve the qualities of products.

**Re claim 6**, Ishida et al. show and disclose

The electronic circuit board intermediate member according to claim 1,

Wherein the adhesive layer (adhesive layer of tape 8) contacts the extended electrodes and the carrier tape (fig. 1C).

**Re claims 7, 9 and 11**, Ishida et al. show and disclose

According to claims 1, 2 and 3 respectively, wherein the IC chip is embedded in the base member (fig. 1C).

**Re claims 8, 10 and 12**, Ishida et al. show and disclose

According to claims 7, 9 and 11 respectively,

wherein the electrode of the IC chip is arranged between the IC chip and the extended electrode (fig. 1D).

7. Claims 4-5 and 13-16 are rejected under 35 U.S.C.103(a) as being unpatentable over Ishida et al. in view of Iketani et al. and Emori et al. (US6378774).

**Re claim 4**, Ishida et al. show and disclose

A manufacturing method for manufacturing non-contact ID card and the like comprising:

the electronic circuit board intermediate member (fig. 1C) being obtained by disposing interposer boards (100) on a carrier tape (8) at every predetermined interval (fig. 1C), the interposer board being obtained by mounting an IC chip (6, fig. 1C), by forming extended electrodes (9, fig. 1C) each connected to a corresponding electrode of the IC chip (fig. 1C), and by forming an adhesive layer (adhesive layer of tape 8) to cover the extended electrodes, the carrier tape being obtained by forming an exfoliate layer on one face of a base tape (exfoliated adhesive tape [col. 8, line 19]) such that the extended electrode are arranged between the carrier tape and the base member, the carrier tape being arranged only on a side (bottom) of the extended electrode, opposite the base member,

Ishida et al. does not disclose

peeling an interposer board from an electronic circuit board intermediate member, depressing the interposer board to an antenna circuit board tape to face antenna electrodes formed on an antenna circuit base material film and the extended electrodes.

Iketani et al. teaches a device wherein

peeling an interposer board from an electronic circuit board intermediate member (the tapes can be peeled apart simply by pulling on the films [0061]),

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the adhesive tape of Ishida et al. by using the peel able tape as taught by Iketani et al., in order to simplify the process of the product.

Emori et al. teaches a device wherein

depressing (the abstract disclose, the IC module has a contact-type and a non-contact-type function) the interposer board (smart card 1) to an antenna circuit board tape (101, fig. 2) to face antenna electrodes (102) formed on an antenna circuit base material film (100, fig. 2) and the extended electrodes.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the interposer board of Ishida et al. with an antenna circuit board tape as taught by Emori et al., in order to simplify the assembly of an antenna circuit board and reduce the cost.

**Re claim 5,** Ishida et al. show and disclose

A manufacturing apparatus for manufacturing non-contact ID card and the like comprising:

the electronic circuit board intermediate member (fig. 1C) being obtained by disposing interposer boards (100) on a carrier tape (8) at every predetermined interval (fig. 1C), each interposer board being obtained by mounting an IC chip (6, fig. 1C), by forming extended electrodes (9, fig. 1C) each connected to corresponding electrode of

Art Unit: 2859

the IC chip (fig. 9), and by forming an adhesive layer (adhesive layer of tape 8) to cover the extended electrodes, the carrier tape being obtained by forming an exfoliate layer on one face of a base tape (exfoliated adhesive tape [col. 8, line 19]) such that the extended electrode are arranged between the carrier tape and the base member, the carrier tape being arranged only on a side (bottom) of the extended electrode, opposite the base member,

Ishida et al. does not disclose

means for peeling an interposer board one by one from an electronic circuit board intermediate member, and means for depressing the interposer board to an antenna circuit board tape to face antenna electrodes formed on an antenna circuit base material film and the extended electrodes.

Iketani et al. teaches a device wherein

means for peeling an interposer board from an electronic circuit board intermediate member (the tapes can be peeled apart simply by pulling on the films [0061]),

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the adhesive tape of Ishida et al. by using the peel able tape as taught by Iketani et al., in order to simplify the process of the product.

Emori et al. teaches a device wherein

means for depressing (the abstract disclose, the IC module has a contact-type and a non-contact-type function) the interposer board (smart card 1) to an



antenna circuit board tape (101, fig. 2) to face antenna electrodes (102) formed on an antenna circuit base material film (100, fig. 2) and the extended electrodes.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the interposer board of Ishida et al. with an antenna circuit board tape as taught by Emori et al., in order to simplify the assembly of an antenna circuit board and reduce the cost.

**Re claims 13 and 15**, Ishida et al. show and disclose

The manufacturing apparatus according to claims 4 and 5 respectively,  
wherein the IC chip is embedded in the base member (fig. 1C).

**Re claims 14 and 16**, Ishida et al. show and disclose

According to claims 13 and 15 respectively,  
wherein the electrode of the IC chip is arranged between the IC chip and the extended electrode (fig. 1D).

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

Art Unit: 2859

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to XIAOLIANG CHEN whose telephone number is (571)272-9079. The examiner can normally be reached on 7:00-5:00 (EST), Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on 571-272-2800, ext 31. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit: 2859

/Dean A. Reichard/  
Supervisory Patent Examiner, Art Unit 2841

Xiaoliang Chen  
Examiner  
Art Unit 2841